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# Clean and Competitive Tax Reform

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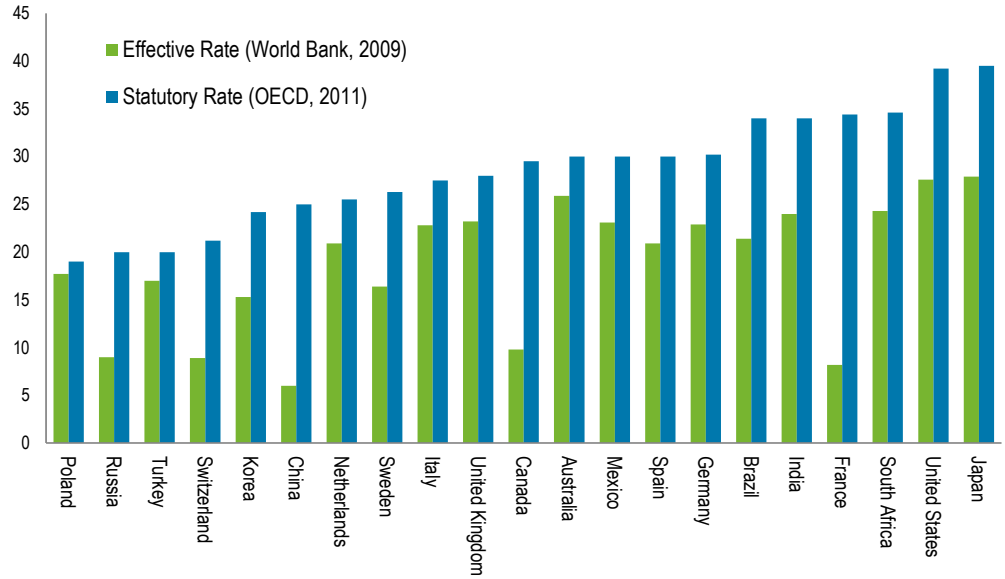
The United States has one of the highest corporate income tax rates in the world (figure 1). Gary Clyde Hufbauer and Martin Vieiro note that in 2011, the statutory tax rate in the United States was 11 percent higher than the unweighted average of competitor economies, and the effective rate was 8 to 9 percent higher depending on the measure used (Hufbauer & Vieiro 2013). Hufbauer and Vieiro argue that this rate discrepancy harms US economic competitiveness, a view echoed in the Simpon-Bowles Commission Report (The National Commission on Fiscal Responsibility and Reform 2010). Hufbauer proposes that tax rates should be lowered, both on profits earned in the United States and profits earned abroad to encourage greater investment at home, as well as expanded foreign direct investment abroad by American MNCs.[1]

**Figure 1: US corporate income tax in context**




Source: Hufbauer and Vieiro, 2013. United States rates include both state and federal corporate income taxes.

[1] http://www.piie.com/publications/pb/pb13-9.pdf

The corporate income tax is certainly not the only way the United States tax code reduces economic efficiency and competitiveness. Labor income taxes, including personal income and payroll taxes, can distort markets by reducing the incentive for work. Indeed, the payroll tax holiday that recently expired provided considerable economic support over the past few years (Lowrey 2012). The United States can reduce both corporate income and labor income taxes without adding to the federal deficit through "Clean and Competitive Tax Reform".

While the current tax code penalizes welfare-enhancing activities, it also ignores key threats to future US economic prosperity like global climate change. The Interagency Working Group on the Social Cost of Carbon estimates the economic cost of each ton of carbon dioxide (the largest anthropogenic contributor to climate change) emitted from power plants, industry and vehicles is between $5.8 and $75.6 per ton (in 2012 dollars), with a central value of $24.8 per ton. Climate-related externalities range from the impact of rising sea levels on coastal homes and infrastructure to the impact of higher temperatures and lower rainfall on agricultural production (National Climate Assessment Development Advisory Committee, 2013). Internalizing these costs in private and public sector decision-making through a carbon tax would mitigate future climate impacts, reduce air pollution and improve overall public health. It would also provide enough revenue to significantly lower the corporate income tax, offset the payroll tax or achieve some combination of both. The net effect would be improved economic welfare and competitiveness.

The Peterson Institute for International Economics, as a non-partisan think tank, has two differing opinion on how the carbon tax should be levied based on different long-term adjustment rates. William Cline, Senior Fellow at the Peterson Institute, has estimated that there should be a tax of $25 per ton on carbon dioxide emissions. He bases his estimate on the IMF figure which calculates that the US is engaging in an energy subsidy by not charging this tax, based on the EPA's interagency review in 2010 which placed the central estimate of the environmental cost at this level. Trevor Houser, Visiting Fellow at the Peterson Institute, asserts that according to his latest research with Shashank Mohan, using the Energy Information Administration's National Energy Modeling System (NEMS)2, a carbon tax starting at $20 per ton in 2013 and rising at an inflation-adjusted rate of 5 percent per year could reduce the effective corporate income tax rate by up to one third – putting the US back in line with international averages.3 Both of these tax rates would generate $128-130 billion a year in new federal revenue, on average, between 2014 and 2023. The Congressional Budget Office projects corporate income tax receipts will average $481 billion a year over the same period (CBO 2013).

The primary energy market impact of a carbon tax would be a shift from coal to natural gas in the power sector. A carbon tax would be a classic "corrective" tax (correcting for an "externality" of damage not otherwise priced, as emphasized by early 20th century English economist Arthur Cecil Pigou). According to Houser and Mohan's modeling, coal's share of power generation between 2014 and 2023 would fall from 37.7 percent under a business-as-usual scenario (in this case the EIA's 2013 Annual Energy Outlook)4 to 23.5 percent under a carbon tax (table 1). Natural gas would make up most of the difference, growing from 27.4 percent of power generation to 36.7 percent. Nuclear and renewable generation would increase as well, though far less than natural gas, from 34 percent to 38.9 percent of overall electricity supply.

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[2] Documentation on the NEMS model is available at http://www.eia.gov/oiaf/aeo/overview/

[3] Adele Morris of the Brookings Institution has also recently recommended a carbon tax/corporate income tax swap (http://www.brookings.edu/research/papers/2013/02/benefits-of-carbon-tax)

[4] The EIA 2013 Annual Energy Outlook is available at http://www.eia.gov/forecasts/aeo/er/index.cfm

Annual coal production revenue would fall by $13 billion a year between 2014 and 2023, returning to 2008 levels. In many parts of the country, this would be offset by an increase in natural gas production revenue. Natural gas producers and mineral owners would earn an additional $35 billion per year between 2014 and 2023 relative to business-as-usual. The Gulf of Mexico, Great Plains and Rocky Mountain regions would see the greatest gains, though producers in Midwest and Mid-Atlantic states would benefit as well. Oil production revenue would remain roughly the same.

The inflation adjusted carbon tax analyzed would raise per capita energy expenditures (inclusive of business and government energy costs) by 10 percent relative to business-as-usual. While that increase is relatively modest from an economy-wide standpoint, and the resulting per capita energy costs would still be lower than recent levels, the impact is not evenly spread. A carbon tax is slightly regressive in nature. It raises energy prices and poorer households spend a greater share of their income on energy (Rausch, Metcalf, & Reilly 2011). To make a carbon tax more progressive, and remedy some of the labor market distortions caused by the current tax code, some of the revenue could be rebated to households in the form of an earned income tax credit to offset the payroll tax as recommended by Gilbert Metcalf (Gilbert E. Metcalf, 2007). Some part of the revenue might also be revenue-shared with coal-producing states if their economies are adversely impacted by the shift to natural gas.

Higher energy costs could also negatively impact the international competitiveness of energy-intensive manufacturing (Houser, Bradley, Childs, Werksman, & Heilmayr 2008). Well-designed border carbon adjustments that impose a tariff on the carbon dioxide emissions embedded in imported goods comparable to the domestic carbon tax could address these concerns (Houser 2009).

**Table 1: Energy sector impact of a carbon tax**

| | **2008** | **2011** | **2014-2023 Average** | | |
|---|---|---|---|---|---|
| | | | Reference | Carbon Tax | Difference |
| Coal's share of power generation | 48.4% | 42.2% | 37.7% | 23.5% | -37.5% |
| Natural gas's share of power generation | 21.1% | 24.8% | 27.4% | 36.7% | 33.9% |
| Nuclear and renewables' share of power generation | 29.0% | 31.9% | 34.0% | 38.9% | 14.2% |
| Oil production revenue (billion 2012 USD) | $249.3 | $282.7 | $390.0 | $389.9 | 0.0% |
| Natural gas production revenue (billion 2012 USD) | $171.5 | $95.4 | $110.6 | $145.9 | 32.0% |
| Coal production revenue (billion 2012 USD) | $38.92 | $45.90 | $51.79 | $38.82 | -25.0% |
| Electricity Prices (2012 cents per kWh) | 10.3 | 10.1 | 9.51 | 11.72 | 23.1% |

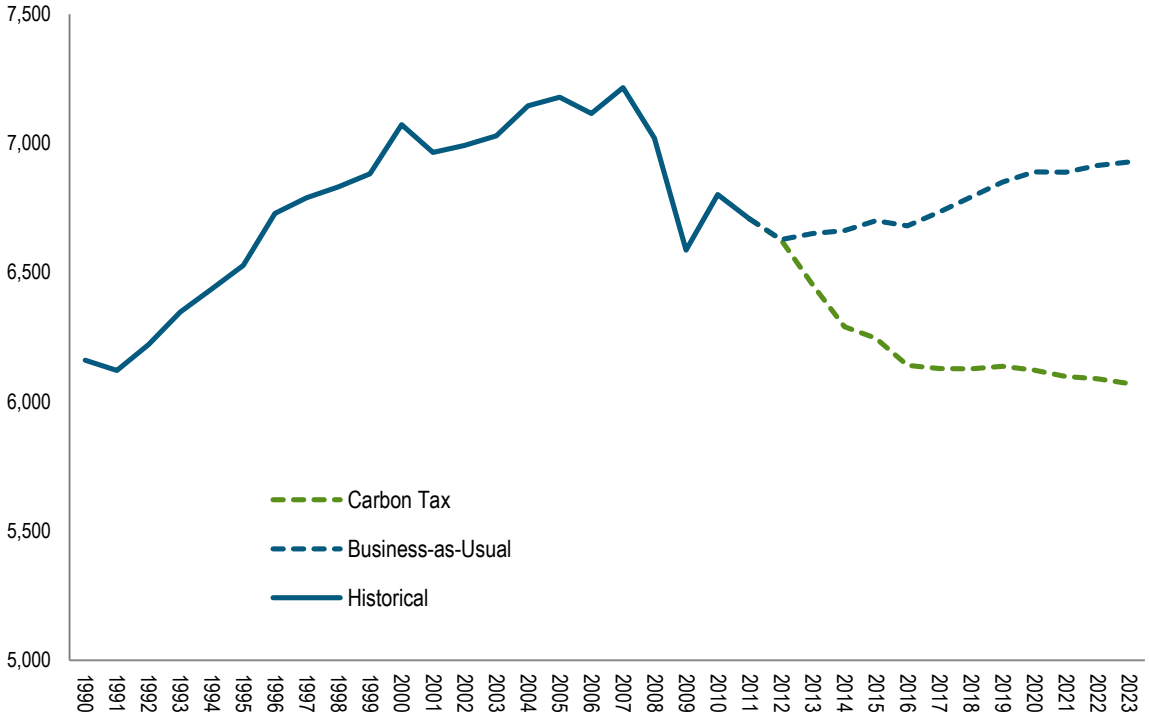
| | | | | | |
|---|---|---|---|---|---|
| Per Capita Energy Expenditures (thousand 2012 USD) | $4,891 | $4,525 | $4,073 | $4,496 | 10.4% |

Source: Houser and Mohan using the AEO 2013 version of the National Energy Modeling System (NEMS)

In the Houser and Mohan modeling, a carbon tax starting at $20 per ton in 2013 and rising at 5 percent per year adjusted for inflation, would reduce US carbon dioxide emissions by 660 million tons per year, on average, between 2014 and 2023. By 2020, overall greenhouse gas emissions would be 15 percent below 2005 levels, within striking distance of the US pledge in Copenhagen to reduce emissions by 17 percent. That would increase American diplomats' leverage in international climate negotiations, increase the odds of winning additional emission reduction commitments from other countries, and further mitigating the risk of economically destructive climate impacts in the US.

Finally, a carbon tax along the lines discussed above would remove the need for most renewable energy tax expenditures, including the Production Tax Credit and Investment Tax Credit. This would yield billions in additional tax savings that could be used to reduce the corporate income tax or used to offset the payroll tax.

**Figure 2: US greenhouse gas emissions, million tons**




Source: UNFCCC, EPA GHG Inventory, EIA Annual Energy Outlook 2013 and Houser and Mohan estimates

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